

Thursday, July 27, 2017 1:10:16 PM

Page 1

DAS

Stop *NR2*

SEP 05 2017

0.00

DAS
27
9-89

DAS
5
9-89

SEP 06 2017

SEP 06 2017

Memo

0.00

5

SEP 05 2017

DAS
28
9-8

0.00

Memo

0.12

DA
27
9-8

SEP 06 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐	OTHER : _____							

Work Order ID 164681

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164681

Page 2

Item ID: D350-578-011

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: AS350/AS355 Bearpaws

Start Date: 8/3/2017 Start Qty: 4.00

4

Cust Item ID:

Required Date: 9/1/2017 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

NR1

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180	Identify as per dwg & Stock Location: <u>F9013</u>	0.00				<u>5</u>	<u>DAS 28</u> <u>9-89</u>		<u>SEP 06 2017</u>
180	Packaging	0.00							
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D350-578-011 Location: _____								
190	QC21- Final Inspection - Work Order Release	0.00					<u>DAS 21</u> <u>9-89</u>		<u>SEP 06 2017</u>
190	QC	0.40							
Quality Control	Memo								

SEP 06 2017DAS 21
9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																											
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval																																																							
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																							
Root Cause		FAULT CATEGORY																																																													
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER :	
Misidentified ☐	Past Due ☐																																																														

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Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2432		Manufactured	No			160	Each	8.0000	2	8-10			
D2432 Bearpaw 19" X 24"													
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				ST430		8							
					163479	8							
D2529		Manufactured	No			160	Each	203.0000	12	48 60			
D2529 Washer													
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				ST008		203							
					160151	3							
					160670	200							
D3601-1		Manufactured	No			160	Each	0.0000	12	48 60			
D3601-1 Radius Block													
D4011-1		Manufactured	No			160	Each	5.0000	6	24 30			
D4011-1 Clamp, Short													
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				ST544		5							
					163705	5							

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step # : _____		QTY Effective : _____			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____					

Picklist Print

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Work Order ID: 164681

164681

Parent Item: D350-578-011

D350-578-011

Parent Item Name: AS350/AS355 Bearpaws

Start Date: 8/3/2017

Required Date: 9/1/2017

Start Qty: 4.00

Required Qty: 4.00

D4012-1

Manufactured No

160

Each

318.0000

6

2430

D4012-1

Cushion

**

DAS
28
9-89

SEP 05 2017

DAS
27
9-89

Location

Loc Qty

Loc Code

FG

5

133458

5

ST545

102

153227

102

ST546A

211

153227

211

30

AN4-16A

Purchased

No

160

Each

26.0000

12

4860

AN4-16A

Bolt

**

DAS
28
9-89

SEP 05 2017

DAS
27
9-89

Location

Loc Qty

Loc Code

FG

5

121541

5

ST343

21

m138040

21

M138238

60

NAS1149D0463J

Purchased

No

160

Each

3,744.000

24

96120

NAS1149D0463.J

Washer

**

DAS
28
9-89

SEP 05 2017

DAS
27
9-89

Location

Loc Qty

Loc Code

GA

558

M135056

40

M137699

518

ST260a

2600

M137988

600

M138084

2000

ST263

586

M137699

586

M138230

120

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Shop Packet Print

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DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step # : _____		QTY Effective : _____			MRB (QSI042) Approval Completed By Lead hand/ Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : ☐					

Picklist Print

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Work Order ID: 164681

164681

Parent Item: D350-578-011

D350-578-011

Parent Item Name: AS350/AS355 Bearpaws

Start Date: 8/3/2017

Required Date: 9/1/2017

Start Qty: 4.00

Required Qty: 4.00

MS21042L4

Purchased

No

160

Each

2,393.000

12

~~4860~~

MS21042L4

Nut

DAS
27
9-89

Location

Loc Qty

Loc Code

FP001

10

m133363

10

GA

11

m135058

11

OVER007

1000

m138084

1000

ST303

1372

m137680

372

m137988

1000

60

SEP 05 2017

DAS
27
9-89

Thursday, July 27, 2017 1:10:16 PM

Shop Packet Print

Page 3

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																											
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval																																																							
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																							
Root Cause		FAULT CATEGORY																																																													
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER :	
Misidentified ☐	Past Due ☐																																																														

5.0 PARTS LIST

5.1 D350-578-011/-013/-015/-017/-021 BEARPAW INSTALLATION

Qty -011	Qty -013	Qty -015	Qty -017	Qty -021	Qty -031	Part Number	Description
X						D350-578-011	BEARPAW INSTALLATION
	X					D350-578-013	BEARPAW INSTALLATION
		X				D350-578-015	BEARPAW INSTALLATION
			X			D350-578-017	BEARPAW INSTALLATION
				X		D350-578-021	BEARPAW INSTALLATION
					X	D350-578-031	WEARPLATE KIT
2						D2432F	Bearpaw
		2				D2432-3	Bearpaw
12	12	12	12	12		D2529	Washer
				2		D2672F	Bearpaw
12	12	12	12	12		D3601-1	Radius Block (Replaces D2274)
					2	D3859-041	Wearplate
6	6	6	6	6		D4011-1	Clamp (Replaces D2438)
6	6	6	6	6		D4012-1	Cushion (Replaces D2182B050)
	2					D4297-1	Bearpaw
			2			D4297-3	Bearpaw
12	12			12	12	AN4-16A	Bolt
		12	12		12	AN4-17A	Bolt
24	24	24	24	24	24	NAS1149D0463J	Washer
12	12	12	12	12	12	MS21042L4	Nut (or MS21042-4)

5.2 D350-578-111/-113/-115/-117/-121 BEARPAW INSTALLATION

Qty -111	Qty -113	Qty -115	Qty -117	Qty -121	Part Number	Description
X					D350-578-111	BEARPAW INSTALLATION
	X				D350-578-113	BEARPAW INSTALLATION
		X			D350-578-115	BEARPAW INSTALLATION
			X		D350-578-117	BEARPAW INSTALLATION
				X	D350-578-121	BEARPAW INSTALLATION
1					D350-578-011	Bearpaw Installation
	1				D350-578-013	Bearpaw Installation
		1			D350-578-015	Bearpaw Installation
			1		D350-578-017	Bearpaw Installation
				1	D350-578-021	Bearpaw Installation
1	1	1	1	1	D350-578-031	Wearplate Kit

REFERENCE ONLY**5.0 PARTS LIST****5.1 D350-578-011/-013/-015/-017/-021 BEARPAW INSTALLATION**

Qty -011	Qty -013	Qty -015	Qty -017	Qty -021	Qty -031	Part Number	Description
X						D350-578-011	BEARPAW INSTALLATION
	X					D350-578-013	BEARPAW INSTALLATION
		X				D350-578-015	BEARPAW INSTALLATION
			X			D350-578-017	BEARPAW INSTALLATION
				X		D350-578-021	BEARPAW INSTALLATION
					X	D350-578-031	WEARPLATE KIT
2						D2432F	Bearpaw
		2				D2432-3	Bearpaw
12	12	12	12	12		D2529	Washer
				2		D2672F	Bearpaw
12	12	12	12	12		D3601-1	Radius Block (Replaces D2274)
					2	D3859-041	Wearplate
6	6	6	6	6		D4011-1	Clamp (Replaces D2438)
6	6	6	6	6		D4012-1	Cushion (Replaces D2182B050)
	2					D4297-1	Bearpaw
			2			D4297-3	Bearpaw
12	12			12	12	AN4-16A	Bolt
		12	12		12	AN4-17A	Bolt
24	24	24	24	24	24	NAS1149D0463J	Washer
12	12	12	12	12	12	MS21042L4	Nut (or MS21042-4)

5.2 D350-578-111/-113/-115/-117/-121 BEARPAW INSTALLATION

Qty -111	Qty -113	Qty -115	Qty -117	Qty -121	Part Number	Description
X					D350-578-111	BEARPAW INSTALLATION
	X				D350-578-113	BEARPAW INSTALLATION
		X			D350-578-115	BEARPAW INSTALLATION
			X		D350-578-117	BEARPAW INSTALLATION
				X	D350-578-121	BEARPAW INSTALLATION
1					D350-578-011	Bearpaw Installation
	1				D350-578-013	Bearpaw Installation
		1			D350-578-015	Bearpaw Installation
			1		D350-578-017	Bearpaw Installation
				1	D350-578-021	Bearpaw Installation
1	1	1	1	1	D350-578-031	Wearplate Kit



Department of Transport

Supplemental Type Certificate

This approval is issued to:

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, Ontario
Canada K6A 1K7

Number: SH93-4

Issue No.: 10

Approval Date: March 30, 1993

Issue Date: March 09, 2015

Responsible Office:

Prairie and Northern

Aircraft/Engine Type or Model:

Airbus Helicopters AS 350 B, B1, B2, B3, BA, D; AS 355 E, F, F1, F2, N, NP; EC 130 B4 and T2.

Canadian Type Certificate or Equivalent:

H-87 (Airbus Helicopters AS 355 E, F, F1, F2, N, NP)
H-83 (Airbus helicopters AS 350 B, B1, B2, B3, BA, D; EC 130 B4 and T2)

Description of Type Design Change:

Bearpaw Installation

AS 350/355 models

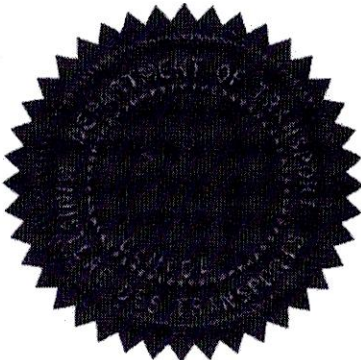
Manufacture of the bearpaw kits must be in accordance with Dart Aerospace Ltd. MDL-D350-578, Revision A, dated Jun 11th, 2010 or later approved revision.

Installation of the bearpaw kits must be in accordance with Dart Aerospace Ltd. Drawing D350-578, Revision F, dated Aug 28th, 2008 or later approved revision.

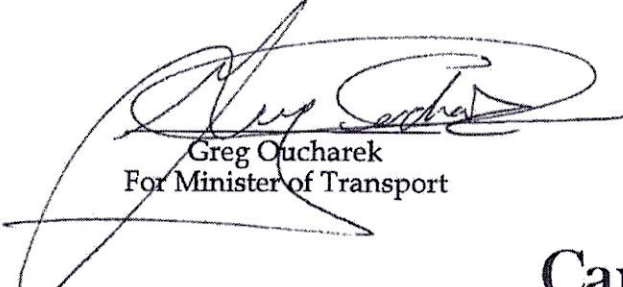
Maintenance of the bearpaw kits must be in accordance with Transport Canada accepted Dart Aerospace Ltd. ICA-D350-578, Revision 1, dated Aug 28th, 2008 or later Transport Canada accepted revision.

The basis of certification for this modification was FAR 27, up to and including Amendment 27-23.

- See Continuation Sheet -



Conditions: This approval is only applicable to the type/model of aeronautical product specified therein. Prior to incorporating this modification, the installer shall establish that the interrelationship between this change and any other modification(s) incorporated **will not** adversely affect the airworthiness of the modified product.


Greg Oucharek
For Minister of Transport

Canada